WHAT IS CLAIMED IS:

1. A production method for a run flat tire supporting member capable of supporting load when run flat running comprising:

shaping a cylindrical member having a bottom part out of a flat plate metal member by deep drawing;

removing an opening part side and the bottom part side of the cylindrical member; and

curving to shape the cylindrical member into a shape comprising a projecting part, at the axial direction middle part of the cylindrical member, projecting to the outside in the radial direction.

2. A production method for a run flat tire supporting member capable of supporting load when run flat running comprising:

shaping a cylindrical member having a bottom part out of a flat plate metal member by deep drawing;

curving to shape the cylindrical member into a shape comprising a projecting part, at the axial direction middle part of the cylindrical member, projecting to the outside in the radial direction; and

removing an opening part side and the bottom part side of the cylindrical member that has been curved into the shape comprising the projecting part.

3. The production method for a run flat tire supporting member according to claim 1 or 2, the curving to shape the cylindrical member further comprising:

inserting the cylindrical member into an inner circumferential side of a cylindrical shaping mold having an inner circumferential surface comprising a surface shape corresponding to the projecting part;

filling an inner circumferential side of the cylindrical member with a liquid;

pressurizing the liquid; and

curving the cylindrical member by the liquid pressure to conform to the shaping surface.

4. The production method for a run flat tire supporting member according to claim 3, the curving to shape the cylindrical member further comprising:

providing the liquid sealed in an elastic bag member on the inner circumferential side of the cylindrical member;

pressurizing the liquid together with the bag member so as to apply the liquid pressure onto the cylindrical member via the bag member.

5. The production method for a run flat tire supporting member according to claim 3 or 4, so as to set the bulge pressure P in a calculation value of formula (1) in the shaping with a value selected as a constant K in a range of 1.5 to 20:

$$P = K \times S \times T \quad \text{... Formula (1)}$$

wherein a bulge pressure, as the maximum value of the liquid pressure to be applied to the cylindrical member by the liquid filled on the inner circumferential side of the cylindrical member, is P (Kgf/mm^2), the thickness of the cylindrical member is T (mm), the tensile strength of the metal material comprising the cylindrical member is S (Kgf/mm^2), and the constant for determining the bulge pressure P is K (where K is a positive real number).

6. A run flat tire supporting member capable of supporting load when run flat running comprising a projecting part, projecting to the outside in a radial direction of a jointless cylindrical member, that is formed by curving an axial direction middle part of the cylindrical member.

7. A pneumatic run flat tire comprising:

a tire comprising,

a toroidal carcass spanning between a pair of bead cores,

a side rubber layer configuring a tire side part and disposed on the outside in a tire axial direction of the carcass, and

a tread rubber layer configuring a tread part and disposed on the outside in a tire radial direction of the carcass;

a tire size mounting rim for mounting the tire; and

a supporting member, disposed on the inside of the tire so as to be assembled on the rim together with the tire; wherein

the run flat tire supporting member is a run flat tire supporting member produced according to claim 3.

8. A production device for producing a ring shaped run flat tire supporting member, which is to be disposed inside a pneumatic tire so as to be assembled onto a rim together with the pneumatic tire, comprising:

a ring form shaping mold comprising a pressure shaping part, which has a surface shape corresponding to a radial direction cross sectional shape of the supporting member, formed on an inner circumferential surface thereof, and a hollow part on the inner circumferential side of the pressure shaping part for inserting with a metal cylindrical member as the shaping material of the supporting member;

a bag member made of an elastic and stretchable membrane material and filled inside with a liquid for inserting into the hollow part on an inner circumferential side of the cylindrical member; and

a pressurizing part for plastically deforming the cylindrical member to conform to the pressure shaping part by applying liquid pressure to the cylindrical member via the bag member, while expanding the bag member towards the outer circumferential side by pressurizing the liquid in the bag member.

9. A production method for producing a run flat tire supporting member using the production device for a run flat tire supporting member according to claim 8 comprising:

inserting the metal cylindrical member into the hollow part;

inserting the bag member into the inner circumferential side of the cylindrical member that is in the hollow part;

pressurizing the liquid in the bag member inserted into the hollow part or a liquid filled inside the hollow part with the pressurizing part; and

plastically deforming the cylindrical member to conform to the pressure shaping part by the liquid pressure.

10. A production method for producing a ring shaped run flat tire supporting member, which is to be disposed inside a pneumatic tire so as to be assembled onto a rim together with the pneumatic tire, comprising:

inserting a metal cylindrical member, as the shaping material for the supporting member, into a hollow part provided on an inner circumferential side of a pressure shaping part in a ring form shaping mold, the pressure shaping part configuring a surface shape corresponding to a radial direction cross sectional shape of the supporting member, formed on

the inner circumferential side of the ring form shaping mold;

inserting a bag member made of an elastic and stretchable membrane material and filled inside with a liquid into the hollow part on an inner circumferential side of the cylindrical member;

pressurizing the liquid in the bag member with a pressurizinng part so as to apply the liquid pressure to the cylindrical member via the bag member;

plastically deforming the cylindrical member to conform to the pressure shaping part; wherein, so as to control a bulge pressure P in a calculation value of formula (1), a value in a range of 1.5 to 20 is selected as the constant K,

$$P = K \times S \times T \ldots \text{formula (1)}$$

wherein the bulge pressure is the maximum value of the liquid pressure to be applied to the cylindrical member by the liquid pressurized by the pressurizing part via the bag member is P (Kgf/mm^2), the thickness of the cylindrical member is T (mm), the tensile strength of the metal material comprising the cylindrical member is S (Kgf/mm^2), and the constant for determining the bulge pressure P is K (where K is a positive real number).